

REPORT

ON

ENDEMIC AND EPIDEMIC DISEASES

(AS WELL AS DISEASES AND HEALTH ADMINISTRATION GENERALLY)

IN

THE PHILIPPINE AND ADJACENT ISLANDS

IN RELATION TO THE

LAWS AND PRACTICE OF QUARANTINE IN AUSTRALIA

BY

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Office of the Central Board of Health,
Adelaide, 15th June, 1908.

To the Honorable the Prime Minister of the Commonwealth.

SIR,

In pursuance of the duty intrusted to me, I have the honour to submit to you the following report of an inquiry into the endemic and epidemic diseases prevailing in the Philippine and adjacent islands as well as diseases and health administration.

In forwarding the report, I desire to state that it has not been completed at such an early date as I could have wished. The delay, however, which was unavoidable, has enabled me to utilize the most recently issued official reports dealing with health matters in the Philippine Archipelago, and Hong-Kong, at the time of my visits to those places. A study of these reports has afforded the opportunity of comparing the view taken by the health authorities there with my own personal observations, a matter of much importance when interpreting official reports.

The complement of the present report is the "Report on Hygiene in the Northern Territory of South Australia," made to the Minister of Health for this State, in which I deal with many of these subjects from the stand-point of Australian conditions and experiences.

I have to acknowledge many obligations to medical and other officials, particularly to Dr. Victor G. Heiser, Director of Health; Dr. Paul C. Freer, Superintendent of Government Laboratories; Dr. Richard P. Strong, Director of the Biological Laboratory; Dr. H. B. Wilkinson, physician to the San Lazaro Hospital; all of the Public Health Service of the Philippine Islands; and to Dr. E. Clark, of the Department of Public Health, Hong-Kong. They very courteously placed all facilities at my disposal for investigating, and gave me their cordial co-operation in inspecting and studying every subject on which I wished to obtain information.

I have the honour to be, sir,

Your obedient servant,

W. RAMSAY SMITH.

I.—INTRODUCTORY.

On the 14th October, 1905, the ss. *Changsha*, of the China Navigation Company, on arrival at Port Darwin, had declared the presence of Asiatic cholera at Manila. When the clearance papers came before me I requested the Government to inquire whether the Commonwealth Government had received any intimation of the existence of Asiatic cholera at Manila. The reply was, "No advice received." We found that no system of notification to the Commonwealth or to this State was in force.

On the 10th November, 1905, the Health Officer at Port Darwin reported to me by telegraph that the ss. *Empire*, of the Eastern and Australian line, had arrived there five and half days after leaving Manila, where Asiatic cholera and plague existed, and that, pending instructions, he was withholding pratique and forbidding communication between the vessel and the shore. The telegram reached me in Adelaide ten minutes after it was handed in at Port Darwin. I at once instructed the Health Officer to inspect all the passengers and crew and to give pratique if he found no case of quarantinable disease on board. In three hours the vessel had transacted all her business with the port, and had departed with a clean bill of health. The Minister of Health approved the procedure.

This new departure, from the ten days' limit of the Venice Convention of 1897, to the five days' limit of the Paris Convention of 1903, raised the practical question of our sanitary relations with the Philippine Islands, Hong-Kong, Singapore, and Javanese ports.

Unfortunately, under the Quarantine Act of this State, we cannot compel a vessel to produce her bills of health from other places unless and until she is actually placed in quarantine. In the absence of machinery for apprising us of the facts regarding disease in the Philippines, and in order to prevent unnecessary delay to shipping at Port Darwin, which is the "port of entry" for the Commonwealth on the north of the Continent, I made arrangements with the various shipping agents that a statement of the actual numbers of cases of various epidemic diseases at ports of call should be entered on the bills of health of vessels from Singapore and Manila. This worked well as a temporary measure, and a means of obtaining a certain amount of necessary information. I also took measures to obtain concerted and uniform action with Queensland, New South Wales, and Victoria, in respect to the time limit of quarantine. With the view of inspiring confidence in our action and inducing the authorities of other States to adopt the reduced limit, we let it be known that we, on our part, were taking stringent measures, by strict inspection at the nearest port of entry, to prevent the introduction of disease into the Commonwealth through our State. My telegram to the Commissioner of Health, Queensland, was as follows:—"Plague and cholera exist at Manila. No notification to Commonwealth by American authorities. Am insisting being apprised from Darwin conditions before clearing vessels, and am submitting crews and passengers to inspection. Shall inform you any suspicious circumstances. Desire in turn to know any unfavorable reports Thursday Island." 10.11.05.

The following copy of a letter from the American Consular Agent at Brisbane, dated 22nd November, to the American Consul-General at Melbourne, was shown to me in Manila:—" I have the honour to acknowledge the receipt of your letter of the 17th instant, and to thank you for the information contained therein.

" I wired you yesterday as follows:—" South Australian Health authority wires Health Department here that plague and cholera existing Manila, and no notification to Commonwealth under Paris Convention. Kindly reply if statement correct. If not aware, suggest your cabling Manila.' I received your reply, ' No knowledge of either plague or cholera at Manila.' The reason I sent this telegram was because Dr. Ham, the Queensland Health Commissioner, showed me a telegram from Dr. Ramsay Smith, of Adelaide, stating that both plague and cholera existed at Manila, and that the fact was being concealed by the American authorities there in contravention to the Paris Convention.

" Dr. Smith has also notified the Melbourne health authorities to that effect, and they have in their turn also notified Dr. Ham. Dr. Smith also says that he is subjecting all vessels arriving at Port Darwin from Manila to a very rigorous examination. I feel sure that the accusation of concealment of the actual facts at Manila, and of the contravention of the Paris Convention, is an unjust accusation against the American authorities, and that the statement should be officially and firmly contradicted as soon as possible, by yourself, as the chief American representative in Australia, to remove the stigma. I therefore respectfully suggested that you should cable Manila to ascertain the actual facts so that you might present them to the Commonwealth Health Authorities."

This furnishes a study of misunderstanding. Nothing was farther from my thoughts than to suggest that the Americans were doing anything to conceal the state of affairs in Manila. The absence of a system of notification to the Commonwealth, or to South Australia—even the American Consul-General at Melbourne was not apprised of the state of affairs, was the all-important fact we had to reckon with in our treatment of vessels from the Philippine Islands. It is gratifying to be able to state that since my visit bulletins of health are supplied direct from Manila to the Commonwealth Government, and are sent to our Government. These are of practical use as compared with the Public Health Reports issued by the American Treasury Department. For instance, the Manila Report for the week ending 27th January, is forwarded from Manila on 1st February, is sent out from Washington on 23rd March, and would reach us here, if sent, about the beginning of May, too late to be of any real service.

It will be obvious that at that time fuller information was required regarding the presence of disease in places that were just on the reduced time limit for plague and cholera. Knowledge was likewise required regarding not only the Acts of Parliament there in force, but also the practice of the health authorities in dealing with cases of communicable disease and with the shipping. I therefore took the opportunity, when visiting the Northern Territory on business connected with health matters, to visit Manila and Hong-Kong, and to make personal inspection of the mode in which sanitary and quarantine matters were being handled by the authorities there.

As regards Singapore, Javanese ports, the Aru Islands, Ke Islands, and other places trading with Port Darwin, I collected a good deal of information from various sources. This, however, has not been tested by my own observations; and from a comparison of the reality with the officially, reported elsewhere, I have seen enough to enable me to estimate the value to be attached to such information. I shall, therefore, not refer to it further, but shall confine my remarks to what I have been able to confirm.

II.—PHILIPPINE ISLANDS.

When the Americans initiated a system of medical administration in the Philippines in 1898, they were confronted with the problem of how to carry on trade safely on modern lines with a city whose sanitary system, so termed by courtesy, was framed on medieval models if on any at all. Another factor, and one of unknown quantity, was the influence of a tropical climate on the general well-being and special diseases of the inhabitants. It will simplify matters to deal with this last subject first and dispose of it as a preliminary.

INFLUENCE OF TROPICAL CLIMATE.

Those who have studied this subject practically on the spot ought to be entitled to speak authoritatively on the matter. The American physicians, during the past ten years, have had ample opportunity to observe and record facts, and to test and verify conclusions. Dr. William S. Washburn, speaking on "The Relation of Climate and Health, with special reference to American occupation of the Philippine Islands," states his conclusions thus:—

- (1) With respect to the principal climatologic factors, temperature, humidity, and atmospheric movements, the climate of the Philippine Archipelago is not extreme, and occupies an intermediate place in tropical climates, as it is distinctly insular in character, the greater portion of the land area being not far distant from the ocean.
- (2) Excluding localities in the tropics characterized by excessive heat, high relative humidity, or unhealthy soil conditions, acclimation or physiologic adaptation of the white man to tropical environment is possible.
- (3) If acclimation is possible, colonization is possible.
- (4) Failures of the white race to live in the tropics and maintain health, excluding localities indicated in the second conclusion, appear to have been due principally to non-observance of the rules of personal, domestic, and public hygiene.
- (5) As a rule, Americans appear to become acclimated in the Philippines during the third year of residence.
- (6) With sanitary surroundings and by observing the rules of personal and domestic hygiene, residence of Americans in the Philippine Islands appears to be attended with as little danger of disease and death as residence in the United States under similar sanitary conditions."

The present Director of Health says:—"With sanitary surroundings, and by observing the rules of personal and domestic hygiene, Americans live in safety in the Philippines with as little danger of disease or death as they might expect in the United States under similar sanitary conditions. In no country in the world has the Government done more for the protection of its employés."

For some considerable time it has been known that it is wise for dwellers in temperate zones to change their habits when visiting or residing in the polar regions; but it is only now being recognised that British people migrating to torrid climes must make some alteration in their mode of living if they are to preserve their health. One thing more requires to be recognised, viz., that tropical countries have special diseases, which are acquired in special ways, and that special means must be employed for their prevention.

HYGIENIC HISTORY OF THE PHILIPPINES.

Leaving this preliminary subject, I come now to speak of sanitation in the Philippines, and the changes brought about by the medical administration from the occupation by the Americans in 1898 to the present time.

The Philippine Archipelago consists of eleven large and about 1,000 small islands. It has an area of 112,000 square miles, that is, it is nearly as large as Japan. It is characterized by high average fertility, abundance of minerals, beautiful scenery, and is estimated to be capable of supporting a population of 20,000,000 persons at least. The present population is about 8,000,000. Its people are divided by race and language into about seventy sorts, speaking over thirty different languages, not to mention the number of dialects, from the lowly negrito—like a little round-headed negro, who never builds houses, but lives a solitary forest family life, existing by killing monkeys with bows and arrows; through the igorotes—taller, Malay-like, mountain warriors, though peaceful scientific agriculturalists when undisturbed, having the village as the unit of political organization; up to the higher Filipino with his scientific modes of work and his artistic tastes.

The heterogeneousness of the people as regards race and language is only one thing. Three hundred years of misrule, religious terrorism, and superstition, had resulted in a condition of affairs that is almost indescribable, and well nigh incredible. The Americans found that the greatest obstacle to improving the condition of the native was the native himself. And indeed it could not be expected that natives who had lived in such conditions for so long a time could voluntarily change, or intelligently assist the endeavours of others to help them to change, their habits, customs, and superstitions, especially when such change meant the giving up of a great deal of what they had been accustomed to regard as individual liberty.

The city of Manila has a population of about 220,000, made up of about 5,000 Americans, 190,000 Filipinos, 2,500 Spanish, 1,110 other Europeans, 21,000 Chinese, and 1,000 others. The oldest part of the city is practically a Spanish walled town of 300 years ago, with storied houses, narrow streets, and few, if any open spaces. Other parts of the city, especially the business parts, are of a similar nature. The native quarters usually consist of nippa houses built on an open plain.

The whole city is flat and low lying. A large native floating population, estimated at 15,000 people, lives in covered boats (cascos) on the river, and on the ramifications of it known as esteros. The estero used to be a combination of canal, open common sewer, and city water supply. Native quarters, whether afloat or ashore, tend to be overcrowded and insanitary, as must naturally be the case when one or more fighting cocks and a few other domestic animals form an integral part of every family. Sanitary arrangements, where such existed, were of the most primitive description. Everything went into the street or the esteros, or, in the better class houses, into huge "privy vaults." The general mortality in such conditions was high. Amongst children, owing to ignorance of parents and lack of suitable food, the death-rate was frightfully high, over 40 per cent. of all deaths being contributed by children under one year old. Through fatalistic ideas, or from a profound distrust in doctors, about half the deaths occurred in the absence of treatment by qualified physicians.

Such were the conditions ten years ago. What has been accomplished in the way of sanifying? The small-pox death rate is now inconsiderable on account of efficient methods of dealing with the disease. The general death rate of the city has been gradually reduced. Epidemics have become fewer and less severe. With the view of checking the spread of malaria and of improving health generally, the old moats and all places that permitted standing water to accumulate are being filled up or drained. Stringent laws have been made regarding the purity and non-contamination of various kinds of food, particularly milk. Overcrowding is being obviated by a system of electric cars running from city to suburbs, thus enabling the poorer classes to live at a greater distance from their work without much loss of time in going to and from it.

The two greatest needs—abundant and pure water and a municipal system of sewerage—are about to be supplied. Meantime, the fouling of the streets and esteros has been stopped by the installation of a pail conservancy system and the establishment of public latrines for the use of people in adjacent tenements. To prevent the spread of dysentery and parasitic diseases, all restaurants, hotels, and public factories of drinks, are compelled to use condensed water. This is supplied to all persons by the Government at a cost of one penny a gallon.

It must not be inferred that the authorities enter into competition with private enterprise. They are careful not to do so; but sometimes such action is unavoidable. For example, soon after the American occupation, shipping companies imposed practically prohibitive rates for passengers and freight throughout the islands. The Government introduced a "coast-guard" service of steamers which "relieved the situation." Again, private firms began to charge £400 for certain work that should have been done for £120. The Government put up their own work-shops. Then the monopolists began to complain that the Government were taking the bread out of honest people's mouths.

PRESENT SYSTEM OF ADMINISTRATION.

This subject is really three-fold, involving a study of the means at the disposal of the authorities for (a) the discovery; (b) the isolation; and (c) the study, of cases of communicable disease.

The first American administration in the Philippines consisted of a provisional Board of Health, which was appointed in 1898. The

members were all medical men—the three active members being in the United States Military Service, and the two honorary members being Spanish practitioners in Manila. In 1899, a Commissioner of Public Health was appointed. The Board was reorganized and enlarged. Later on, provincial Boards of Health were established under the supervision and control of the Board of Health for the Philippine Islands, which also acted as the Board of Health for the city of Manila. By-and-by the Board system, a system in which the element of direct personal responsibility does not exist, was abolished.

The present system, which is in accordance with Act No. 1407, is as follows:—There is a Bureau of Health, the only one of the kind under the American Government. The director, as head, has very extensive powers. He is personally responsible for all financial matters. There are eleven different divisions, each having an administrative chief. An assistant director is head of the inspection division. The abolition of a Central Board has recently been followed by the abolition of Provincial Boards, and the establishing of district health officers appointed by the Governor-General. The district health officer is responsible to the Director of Health for the general sanitary condition of his district, and he has control over municipal Boards of Health. This control is by no means nominal; if the president of a municipality should neglect or refuse to perform his duty, the district health officer will take proceedings against him, and he may be subjected to fine or imprisonment, or both, and removed from his office. It is recognised that organization and system mean everything in health work. The director says that experience has amply justified the change from the Board to the Bureau system. The saving in time alone, to say nothing of money and annoyance, has in itself fully warranted the reorganization so far as the Bureau of Health is concerned.

The city of Manila is divided into five health districts, each being under a district health officer who acts as coroner's physician, renders help in emergency cases, and is surgeon to the police and firemen. He supervises inspections of food and water, and advises on all sanitary matters. Each station has its staff of American and native sanitary inspectors, disinfectors, and sanitary police, and has its dispensary, where free medical advice is given by one or more municipal physicians, and where prescriptions of other physicians are dispensed free of charge when marked "for the poor." There is a municipal midwife for attending the poor. Forty native police of the City Police Department are engaged under the direction of the Bureau of Health as special sanitary inspectors.

Each station is responsible for the health and sanitary conditions of the district in which it is located. "This involves the sanitary inspection of buildings, schools, bottling works, tiendas, hotels, restaurants, yards, alleys, latrines, vaults, stables, sewers, and similar places and conveniences, and the preparation of orders for repair, or, in the case of sewers, the notification of the proper authorities." The form of order served is simple and runs thus:—"The occupant or owner of property No. _____ Street, is hereby ordered to _____ within _____ days from date of notice.

Chief Sanitary Inspector."

To an Australian, perhaps the most outstanding feature in this administration is the system of house inspection. In every house there is posted up in a conspicuous place a "Sanitary Report" card, 10½ inches by 6 inches in size. An inspector visits the house two or three times a week, and enters on the card the date and hour of his visit, the condition of the premises, and his name. The instructions on the card are as follows:

The attention of the owners of this house is called to their duty of keeping the same in a clean and sanitary condition, especially the drains, closets, stables, and the interior of the same.

All refuse and sweepings should be gathered in boxes or baskets and dumped into the refuse carts which pass daily to remove them.

All repairs of the house should be promptly attended to and the same painted or white-washed.

The Bureau of Health must be notified of any case of bubonic plague, small-pox, cholera, or any other contagious disease occurring in this house.

Any person who fails to carry out these instructions will be arrested and brought before the Courts.

Note.—Please notify the Bureau of Health of any discourtesy on the part of the Sanitary Inspectors."

The instructions on one side of the card are printed in English, on the other in Spanish.

Every sanitary inspector is required to send in a daily report to the Bureau of Health giving details of houses inspected and re-inspected; of houses ordered to be cleaned, painted, or white-washed, and the number so cleaned; of the number of cess-pools, vaults, yards, &c., ordered to be cleaned; of rats caught, poisoned, or purchased; and of the number of persons sick reported to the municipal physician.

This system of frequent inspection of all houses may seem very drastic; but one must remember the circumstances of the inhabitants of a city whose streets and tenements are in many cases built after the pattern of Spanish towns of 300 years ago. Many of the conditions were unspeakable. We can hardly imagine "privy vaults" two stories high in houses, yielding 8,500 gallons of human excreta at a single cleaning, as the Americans found in some instances when they began operations.

(a) *Discovery.*

Private medical practitioners attending cases of infectious disease are required to report verbally at the Health Station. The particulars are taken down by the municipal inspector, who sees the case and fills in a regulation form. The definition of infectious disease includes cholera, small-pox, chicken-pox, plague, diphtheria, including membranous croup, ship or typhus fever, typhoid, spotted, relapsing, yellow and scarlet fevers, measles, glanders, leprosy, anthrax, and any other diseases of an infectious, contagious, or pestilential nature, or any disease declared to be dangerous to the public health.

(b) Isolation.

Persons suffering from infectious diseases are removed by ambulance to hospital compulsorily where a hospital exists. The activity of the officers may be judged from the fact that orders have had to be made to prevent furious driving by ambulance conductors.

In Manila all cases of infectious diseases are isolated and treated at a central hospital within the city bounds. This consists of a series of wooden wards, each one story in height, and standing singly but connected by a short covered way with a common corridor. Here also cases of small-pox and cholera are received.

This method of hospital administration has much to commend it. Centralizing saves expense, time, attendants, nurses, physicians, clerical work and ambulances; and it is effective.

It is gratifying to find a people who give practical effect to their scientific belief in modern modes of disinfection. Too often in many communities one finds people in authority or whose duty it is to advise, expressing themselves as ardent sanitarians and firm believers in the efficacy of up-to-date disinfectants and methods of preventing infection, but who nevertheless, at the first suspicion of plague or small-pox or other similar disease, cast aside all their professed belief in medical isolation and go panic-mongering for a geographical isolation that means expense and inconvenience without being correspondingly efficient or efficient at all.

One is struck with the quietness, thoroughness, and kindness exhibited by the American officials when dealing with the sick. I was talking to some convalescent patients in a cholera ward when the nurse came and told the doctor that a case of cholera had been reported. We went to see the patient, a woman. In a few minutes the physician had examined her, and had given all directions, had spoken to her pleasantly and hopefully regarding her condition and the prospects of recovery. His true scientific attitude showed itself immediately after. He asked me, "What do you know about cholera?" I replied, "Nothing." He said, "Neither do I; and we have been working at it for some years now." They had been working for some years, they had been treating cases successfully, they knew almost everything that had been written or done in connexion with the subject; and yet all this amounted to "nothing"—that is, the scientific knowledge of the subject was incomplete, and until the links were traced, or the gaps filled up, they would take no credit for any real knowledge of the disease.

(c) Study.

The commercial value of science is beginning to be recognised even by Governments. The French have said that without quinine they could not have conquered Morocco. The Panama Canal was impossible while the mosquito had an unrestricted field of operations. The interdependence of hygienic and economic conditions has been forcibly illustrated by Major Carter, formerly Commissioner of Public Health for the Philippine Islands, when dealing with the epidemics of 1902-3. He says:—"Through the existence of cholera, rinderpest, and surra, these islands, naturally one of the garden spots of the world, have been commercially prostrated. With practically 100,000 deaths from cholera officially reported, and half as many

more persons attacked, nearly every community has been invaded by the disease. Many producers have lost their lives or have been kept from work through terror or the necessity of caring for the sick in their immediate families. The cholera, in many instances, has committed its worst ravages during the time when the rice and tobacco crops should have been planted or when the hemp should have been gathered. In some districts the recent loss by disease of more than three-fourths of the bovines and more than half the equines has made it impossible to put in the usual crops, or even properly harvest those at hand. With the establishment of quarantines between towns, provinces, and islands, the internal trade of the Archipelago was for a time practically brought to a standstill, while the establishment of quarantine against the whole Archipelago by other countries seriously affected its deep-sea traffic through the main shipping ports. The people in many instances have been unable to pay taxes or even to properly provide for their own subsistence, and it has been necessary to receive a large sum of money from the Home Government and to supply rice for the relief of the indigent. As a result, the work of carrying out many needed improvements has been necessarily postponed for lack of funds, and a policy of general retrenchment with respect to the expense of conducting the Government has been in order."

The conditions described were certainly depressing. For encouragement in such disheartening circumstances one has to turn for comfort to the philosophical belief, the assumption of all science, the major premiss of all scientific reasoning:—

" I trust in nature for the stable laws
Of beauty and utility—Spring shall plant,
And Autumn garner to the end of time."

Probably nowhere in the world is there to be seen such a combination of commercial interests and scientific investigation as in Manila. This operates for the mutual benefit of science and commerce, and contributes to the well-being of the whole community. The Americans have found that in the tropics colonizing and sanifying are practically synonymous terms. They realize further that the greatest national asset is not wealth, but health; and they are not slow to declare that their national prosperity would be more securely established were there more health and less immediate pursuit of wealth.

Commissioner Carter, speaking in 1902 of the sanitary requirements of the Philippines, said:—"The fact should be emphasized that in any community, and especially in these islands, governmental economy should begin elsewhere than in the sanitary department, and improved sanitary conditions should not be a signal for decreasing its appropriations. Improvement in health conditions is permanent only while proper sanitary measures are being applied. While the tremendous money loss directly depending upon preventable disease in these islands during the past two years is beyond calculation, it is safe to say that it would have supported a most thoroughly-organized and completely-equipped sanitary organization for the Philippine Archipelago for an entire generation. Sanitary efficiency is the key to the prosperity of these islands, and thus to the success of their administration; in its absence every walk in life will

be unfavorably affected, and the work of every other department of the government will be curtailed for lack of revenue. The interests of humanity, industry, and commerce thus unite to bespeak of the authorities a most liberal financial and moral support for the sanitary department.

“ All the suffering, want, and financial distress above mentioned have been the result of diseases which are generally recognised as of a preventable nature. If they are preventable, it is a fair question to ask why they have not been prevented. The answer to this is that the ideal is nowhere obtained, and that time, money, men, material, adequate laws, and a willingness on the part of the general public to co-operate with the sanitary authorities are required to bring about proper results.”

To give effect to these views, to make science and economics mutually supporting, to prevent both from dissipating their energies, and to exploit in the fullest measure every natural source of wealth, the authorities established an enormous (certainly from our limited ideas of such institutions it is an enormous) laboratory system under one roof and with one superintendent, each department being under the immediate charge of a skilled director. The principles at the foundation of this movement have been set forth by Dr. Freer thus:—
 “ A Government, in beginning its work, can adopt one of two lines of action. It may either allow its various divisions which come in contact with and which need scientific aid themselves to establish the various laboratories in question, each under separate direction and each with separate facilities, or it may adopt the course of inaugurating one central institution where all this class of work can be united, where, therefore, the workers can be in close contact, and where each division is well aware of what is being done in the others. Co-operation in this sense would be most complete, and while there might be some slight disadvantages in the latter course by reason of the fact that the various divisions of the Government could not in their own quarters, study and obtain the results looked for, these are by far outweighed by the co-operation which can be obtained between the scientific men by the division of labour, which frequently saves both time and money, and by the reduction in equipment, which inevitably follows a concentration of allied interests.

“ The civil government of the Philippine Islands, taking all of the above-mentioned facts into consideration, and knowing well the expense and loss of efficiency due to a scattering of its scientific energies through a number of bureaus, decided to establish one central laboratory system, to properly equip and house this series of institutions, and to place them under a central direction.”

The buildings and fittings cost about £150,000. Maintenance, exclusive of salaries, amounts to nearly £20,000 a year. Work, whether for Government Departments or for private individuals, is done expeditiously, and without circumlocution. Any one desiring an analysis to be made, a mineral to be described, a plant to be photographed, a diagnosis to be made or confirmed from a specimen, sends the article with a filled in “ blank ” the size of a sheet of note paper, and receives it in return with the work done and the cost marked. The income derived from work done for outside applicants amounts to about £5,000 a year. Any scientific worker from any part

of the world is welcomed to the institution, uses the rooms and apparatus, obtains all the specimens and assistance he requires; and in return for all this free assistance he is expected to print his results in the official publications. He may also publish them elsewhere if he pleases. The result is that the Americans provide such a field for investigation and such means of study as exist nowhere else in the world, especially in so far as tropical diseases are concerned. What would have been regarded some years ago as the wild dream of an unpractical scientist's imagination has become, as I can testify from personal observation, an accomplished fact. The result is not scientific extravagance; it is true national economy; it is sound business.

EDUCATION AND INSTRUCTION.

The counterpart of study is education and instruction. The scientific publications of the laboratories are of the utmost value to scientific workers everywhere. The Medical Association of the Philippine Islands is a living and working body. The Philippine Medical School will probably soon be exerting a powerful influence on the country. Much more significant, however, if not far more important, is the effort that is being made to educate the people, the people generally, all the people, in hygienic matters.

The infant mortality was excessive; the term "appalling" has been appropriately applied to it. To check this preventable loss of life, the authorities issued a pamphlet on *The Care of Infants*, prepared by a committee of four native physicians—a set of plainly-stated, vigorously-expressed instructions.

In the matter of school hygiene and medical inspection of school children the Bureau of Health and the Bureau of Education work conjointly, and a good beginning has been made in the practical work. The authorities recognise that the official part is not the whole, nor even the chief part, of such school hygiene. They act on the principle that all children should be taught the elementary principles of personal hygiene, house sanitation, and the causes that produce communicable diseases, and the measures that are necessary to prevent such diseases. Skilled instruction by a qualified medical practitioner is given to the pupils, the teachers and to institutions.

Personal hygiene finds a place in instruction outside the schools. The authorities pay special attention to new arrivals in the islands, and give them trustworthy advice how they should live. The Bureau of Health has published a set of health rules on cards for distribution. In these days when almost every one who has a duty, or feels that he (or she) has a call, to give instruction on health matters, thinks it essential to "talk microbes," these rules may be quoted as a curiosity, since they contain excellent scientific medical advice couched in plain language:—

It is easier to maintain good health in the tropics than in the United States, but in order to do so you should observe the following simple rules:—

1. Be vaccinated to-day. The Bureau of Health will do it free of charge.

2. Never drink any water unless it has been either boiled or distilled, nor eat any raw vegetables. If you observe this rule carefully you will probably never contract dysentery, typhoid fever, cholera, or any other disease that originates in the intestines. Disregard of this rule is responsible for the return to the United States of over 50 per cent. of the invalids who leave these islands.
3. Fruit is wholesome, and may generally be eaten raw with impunity, provided it is of a kind that grows upon trees, well above the ground.
4. Avoid patent medicines. "Do not put drugs of which you know nothing into bodies of which you may know less."
5. Alcoholic stimulants are not necessary, the advice of "old resident" to the contrary notwithstanding.
6. Generally, disease-carrying mosquitoes fly only at night; therefore, always sleep under a mosquito net.
7. Finally, observe the same hygienic rules that are applicable to temperate climates, including those of physical exercise.

MANNER IN WHICH THE ADMINISTRATION IS CARRIED OUT.

In reading reports by medical members of the American administrative service one notes the evidence of special education, wide general culture, and extensive experience. In meeting these men and in dealing with them personally, one is specially struck with their "faculty of getting things done." There is nothing of the American "hustle," however; it seems to have given place to that business-like method which may be observed in greatest perfection in the administration of a British man-o'-war. There is no running counter to established custom unless there is most imperative reason for doing so—the rule of the road in the Philippines is European, not American. The administration not only utilizes native and Chinese inspectors, vaccinators and doctors, but puts them in responsible charge of native and Chinese institutions. The Americans say they do not need American, European, or other foreign physicians, but educated Filipino sanitarians. They have had to deal on the one hand with the ignorance of the uneducated, and with the superstitions of the imperfectly educated; on the other hand they have had to reckon with the activities of "smart" men who are ever ready to make the people's necessity their own opportunity, and to make the difficulties of the responsible authorities the means of ministering to personal avarice. In all the administration they have been eminently tactful and highly successful. They attribute their success to education, patience, and persistence. In connexion with this service, one remark has to be made. The authorities have experienced some difficulty in obtaining the class of men desired for the sanitary service at the salaries offered.

In Manila the laws relating to sanitation are enforced with the utmost impartiality against all offenders irrespective of social position, wealth, or influence. In the provinces, however, the case is said to

be different. Friendship, political obligations, political animosities, and other influences are said to weigh with municipal provincial courts.

NOTES ON DISEASES, WITH SPECIAL REFERENCE TO QUARANTINE.

The relative importance of different diseases in various countries scarcely receives the recognition it deserves. In many parts of the world a whole ship-load of small-pox patients might be looked on with indifference or complacency, while in Australia we believe we are justified in using all human and humane means to exclude a single case. Here we think nothing, or very little, of the form of eye disease known as trachoma, and we should not think of subjecting a person suffering only from this disease to quarantine or of disallowing him to land. In the Philippines, however, the disease does not so exist; and the authorities keep it out by all possible means, on account of the ravages it might make and the amount of blindness it might cause in a population such as exists in those islands.

The Americans regard an immigrant from two points of view—(a) the economical; (b) the medical. Under the immigration laws, paralytics, insane, lepers, active syphilitics, active consumptives, and sufferers from organic heart disease are excluded. Such persons are regarded as likely to become a burden on the Government. From the medical stand-point it is important to exclude diseases that do not exist at present, or that are found in only a small number of cases. For instance, sufferers from trachoma, as stated above, are excluded. Similarly, persons suffering from favus, a disease of the scalp, are denied admission. Diphtheria, typhoid fever and measles are not indigenous in Manila, hence there is a strict quarantine against these diseases.

Cholera.—An epidemic of cholera began on 20th March, 1902, and ended on 8th March, 1904. During the two years, 166,252 cases and 109,461 deaths were officially reported, but there is ground for believing that the epidemic was twice as extensive as these figures show. The Filipinos suffered more severely than people of other races. All attempts to check the outburst at its start proved ineffective. The Commissioner of Health reported that nothing could be done except to relieve, as far as possible, the sufferings of the sick and destitute, and that the epidemic would cease only when the vulnerable material was exhausted. The chief lessons learned from the epidemic are stated thus:—

- (1) Recognise cholera at the beginning; that is not difficult clinically or microscopically. . .
- (2) Acknowledge it frankly; control it in its incipiency by heroic means, if necessary.
- (3) Provide stores and comforts for the sick and destitute.
- (4) In conclusion: while cholera is perhaps the second greatest epidemic scourge known to men, it is one that may be controlled and defined, if not removed, by wise legislation and authority, by the education of the people in sanitation and hygiene, and by the spreading abroad a knowledge of the necessity of using boiled water and hot cooked food. The wise Chinese know this. They

drink tea and eat hot rice, and very few Chinese, proportionately, succumbed to cholera during the recent epidemic; but certain persons attributed this immunity to the use of opium, which is truly a valuable drug in cholera, and many natives assert that they contracted the opium habit in trying to avoid cholera.”

Cholera appeared again from August, 1905, to December of the same year. During that time there were 255 cases with 226 deaths. The plan of campaign was as follows:—

- (1) Isolation of the sick in the cholera hospital and the rigid disinfection of their houses and effects.
- (2) The protection of the city water supply, including the closing of wells located in the city of Manila.
- (3) Prohibition of the sale of foodstuffs likely to become contaminated, and the proper protection with fly screens of the remainder.
- (4) The education of the public in the precautions to be observed in evading the disease.”

It was carried out very thoroughly. Some features of the new departure stand out strikingly. No attempt was made to quarantine “contacts,” nor to institute a system of “land quarantine.” The expense of such a system would have been prohibitive. No second case occurred in any house—a tribute to the celerity and thoroughness of isolation and disinfection. The education of the public has come to be regarded as a much more effective measure in the suppression of cholera than methods that depend upon force for their application. The latest report states that cholera in recognisable form has disappeared entirely from the Archipelago.

Plague.—This broke out first in 1899, and up till 30th June, 1906, 1,100 cases were reported in Manila, about 85 per cent. of which proved fatal. Among the Chinese in Manila the incidence and mortality were about the same as in Hong-Kong, while the Filipino population living in conditions very similar to the Chinese, proved only one-fortieth as liable to take the disease. The experience of the Commissioner of Health regarding plague is embodied in the following sentence:—“Plague of to-day has lost much of the terror that it inspired in times gone by. This is due to the fact that its cause has been accurately determined, and improved methods have been adopted for its extermination and suppression.”

During the year ending 30th June, 1907, there was not a single case of plague in the islands.

Tuberculosis.—In the Philippines, as elsewhere, tuberculosis, “the most universal scourge of the human race,” is a widespread disease, causing much misery, a deal of poverty, and many deaths. Dr. Heiser’s remarks in his Annual Report for 1907, just to hand, are worthy of the most serious consideration. He emphasizes the fact that tuberculosis is essentially a house disease; that it occurs and is propagated in unnatural conditions created by the victim or his friends; that its progress is greatly facilitated by insanitary conditions; that while the prohibition of spitting on the side walks and in public places is a step in the right direction, perhaps 1,000 cases are contracted in houses for one case contracted on the street; that

the State and Municipal Governments, and not private enterprise, should take the initiative in the great work of prevention; and that the enlightenment of the individual himself, especially as regards living as closely to nature as possible, is of paramount importance in prevention and treatment. In this connexion I may direct attention to what I wrote* over a year ago: "Notification is made the basis of treatment in sanatoria assisted by the State, public philanthropists, local authorities, or private individuals; and much is thereby done for the treatment and cure of the afflicted and the affected. No one would say a word against doing all that is necessary in this way, nor would any one desire to restrain sympathy or practical philanthropy towards consumptives and their needs. It is a question, however, whether we are not in danger of directing our attention too exclusively to the treatment and the cure, and of neglecting what is equally important, if not even more necessary, viz., stopping the supply of consumptives. It may be that with means at our disposal to alleviate we ignore too much the conditions that originate and breed tubercular disease in the population—filth, overcrowding, bad food, bad drink, and such like. Social science and sanitation will not advance much if owners of insanitary property and careless landlords are allowed to draw profits from breeding-grounds of disease. There would be less necessity for donations to charitable and other institutions if such individuals were compelled to do their legal duties. Slum owners, salving their own consciences and stopping public criticism, by contributing to sanatoria should form a fit subject for "Cynicus." And the prime duty of local authorities is not to provide or maintain places for consumptives, but to use every legal effort to abolish the conditions that make consumption possible."

Leprosy.—There are about 3,000 lepers in the Philippines. At the time of my visit there were about 240 in the leper hospital at San Lazaro, and I had an opportunity of studying the various forms of the disease and the management of the patients. Most of the sufferers die from tuberculosis. The authorities, at the time of my visit, were collecting the lepers from various islands and placing them in the new leper colony in the Island of Culion. This is meant to be a practically self-governing Colony, in which the sufferers, though isolated, are allowed much freedom, excellent accommodation, good houses, clothing and food, and many of the luxuries of existence. Such treatment is only right, seeing that lepers at the present time are subjected to a species of martyrdom for the benefit of mankind, medical science, notwithstanding much theorizing, being as yet unable to trace the true origin of the disease and the means by which it is propagated. The relatives of the lepers who wish to be near them are allowed to reside on an island a few miles away from the Colony, and to pay frequent visits to the station. Many of the large islands, aggregating fully one-fourth of the archipelago, are now free from the disease. While collecting the lepers, it was found that in a good many instances other diseases had been confused with leprosy.

Small-Pox.—This disease used to be very generally prevalent throughout the islands, and it still occurs in Manila and other places in a sporadic form. Vaccination has been energetically and extensively practised. Last year over 2,000,000 of the inhabitants were

* *The Practical Application of Wilton's Mortality Curve for Phthisis.* Adelaide: C. E. Bristow, Government Printer. 1907.

vaccinated. The present position relative to small-pox may best be set forth in a quotation from the latest report of the Director of Health:—"During the year there has been unquestionably less small-pox in the Philippines than has been the case for a great many years previous. In the province of Cavite, Bantangas, Cebu, Bataan, La Union, Rizal, and La Laguna, where heretofore there have been more than 6,000 deaths annually from this one cause alone, it is most satisfactory to report that since the completion of the vaccination in the aforesaid provinces, more than a year ago, not a single death from small-pox has been reported; from which it may be seen that if the Bureau could show no further result for the year than the saving of these human lives, it would have more than justified its existence. In fact, if any justification were needed for American occupation of these islands, these figures alone would be sufficient if nothing further had been accomplished for the benefit of the Filipinos."

Malaria.—In the Philippines this disease is less common (or less commonly manifest itself), and is less dangerous than in the United States. The success of the war waged against it in the United States and elsewhere has been one of the greatest triumphs of modern medicine. I have made some investigations into the manifestations of this disease, and have discussed some aspects of this subject elsewhere.* There is no necessity, therefore, to refer to it here in greater detail.

Beri-Beri.—This is a widespread and dangerous disease among the Chinese and Filipinos, particularly among the poorer classes. Europeans and Americans rarely suffer from it. The true nature and cause of the disease are still being studied. Meantime, in the Philippines as elsewhere, its ravages have been greatly decreased by an altered diet and by general improvements in house sanitation. In reading the reports from the provincial districts in the Philippines, I note that beri-beri is not infrequently referred to as following malarial infections. This is of interest in connexion with observations made in Adelaide. Some patients removed from sailing vessels on arrival here from South Africa, suffered from acute beri-beri and malaria at the same time.

Dysentery.—This dangerous and greatly dreaded tropical disease is common in Manila and other parts of the Philippines. It is a water-borne disease due to a minute parasitic animal, an amoeba. White people are prone to contract the disease, and to suffer from abscess of the liver as a complication. Chinese, on the other hand, are much less susceptible, they rarely suffer from hepatic abscess, and recovery among them is common. A great deal can be done, and has been done, in order to obviate the disease. The malady exists in many parts of Australia. It occurs in parts of the Northern Territory; and several cases have come under my observation in Adelaide during the past twelve years, some persons having suffered who had never been within the tropics.

Yellow Fever.—This disease does not exist in the Philippine Archipelago. The species of mosquito by whose agency the fever is spread does exist. A human being suffering from the disease is capable of

* "Report on Hygiene in the Northern Territory of South Australia." Adelaide: C. E. Bristow, Government Printer. "Instructions Concerning the Measures to be taken against Endemic, Epidemic, and Communicable Diseases," Authorized Translation. Adelaide: C. E. Bristow, Government Printer.

transmitting it for only a few days. Infected mosquitoes are not capable of surviving very long sea journeys or extremes of climate such as are experienced on the way from the Eastern States round Cape Horn. These two facts explain the absence of the disease from the Philippine Archipelago. The opening of the Panama Canal, however, will be a source of real danger; and the American authorities are prepared to go to the trouble and expense of fumigating completely every vessel coming through the canal. They know that this will be necessary if yellow fever is to be excluded from the Philippines.

Quarantine and everything relating to the sanitation of sea-going vessels comes under the United States Public Health and Marine-Hospital Service. The laws in force are the quarantine laws of the United States; and the practice is the same as in the States.

The hours of inspecting and clearing vessels are from sunrise to sunset. In practice, this means from 5.30 a.m. to 6.30 p.m. There is no clearing of vessels at night. The health administration is separate from the Customs service and independent of it, except that the Customs officers act as health police when necessary. The authorities insist on the principle that health must be supreme. The launch service is very complete. The vessels are of a very good type, specially designed for health work, stout and serviceable, and moderate in price—a good one can be got for about £1,200.

The quarantine station is at Merivules, about 30 miles from Manila. It is very complete in all its appointments, and fully supplied with the means of disinfecting. The Clayton apparatus for fumigating is not used. No charges whatever are made at the station.

III.—HONG-KONG.

The total population of Hong-Kong in 1897, was 246,880. There is a Chinese floating population of 31,752. Formerly the place was notorious for its unhealthiness. Now it is as healthy as any place in the same latitude.

Notification of infectious diseases is compulsory. Isolation is insisted on in the case of plague, cholera, and small-pox. Hospitals are provided in convenient localities, and some of them are managed by the Chinese under official supervision. Disinfection is rigidly enforced, and segregation of contacts for a certain period in special houses is practised. Cleansing operations are conducted by the authorities themselves if neglected by the occupiers or owners of the houses. The naval and military authorities look after their own cases of disease except plague and small-pox.

There is a Sanitary Board for the colony of Victoria. The principal civil medical officer has control of hospitals, and is president of the Board. The water supply of the city is excellent, perhaps the best in the East. Household sanitation consists practically of the pail system. The only water closets are in hotels and large offices on the front, which are convenient to the sea.

The authorities try to secure the co-operation of the people, both whites and Chinese, in the propaganda of cleanliness. A school reading book, *Course of Hygiene for the Use of Hong-Kong Schools* has been in use for some years. It is probably more fitted to be a guide to teachers when giving oral instruction than a class-book for pupils; nevertheless, it is a better publication than most books of the sort.

That is the official text. The commentary on it, also official, is that in the year 1905, dead bodies to the number of 1,068, were "dumped" in the streets to prevent the authorities from knowing where the persons died. That year's proceedings marked no isolated practice. In an article on "Plague Procedure in Hong-Kong," by the Principal Civil Medical Officer,* it is stated that this practice has extended from 25.1 per cent. of bodies in 1898, to 32.7 per cent. in 1903. In such circumstances the value of notification, isolation, and disinfection is, unfortunately, too easily estimated. In respect of quarantine administration, a proper and sufficient staff is required. The Government allows practically miscellaneous landing.

At Hong-Kong, the Americans have a complete disinfecting plant for the use of all steamers and passengers going to America. This is evidence, of a practical sort, of their want of confidence in the Hong-Kong health administration. The Americans look on Hong-Kong as the great menace to the world. Hong-Kong is a free port. There are no restrictions on anything whatsoever with the exception of opium, which is leased out as a monopoly. The people are keen on trade, and all sorts of diseases are imported from Canton.

It will be seen that the situation in Hong-Kong cannot be pronounced satisfactory from the point of view of other States. In the paper referred to, which is the most recent report to hand on the sanitary condition of Hong-Kong, the following statement occurs (page 40):—"It is an almost hopeless task to expect to stamp out plague entirely in Hong-Kong, because we are, owing to our geographical position, constantly exposed to reinfection from the neighbouring countries, the disease being practically endemic in Canton, Swatow, and Amoy. Many insanitary areas and buildings have been allowed to be erected, and it is only by their re-erection on improved plans, and by the rigid prevention of overcrowding, that plague, or any other infectious disease, can be eliminated from Hong-Kong. This re-building will of necessity be a slow process, but it is being steadily effected by means of the new public health and building ordinance, and by the Government each year removing some of the most insanitary areas of the town."

This is what the authorities themselves say. It will be seen that the Americans are justified in their attitude towards Hong-Kong.

IV.—PRACTICAL CONCLUSIONS.

The question arises: What relation do the diseases mentioned as endemic or epidemic in the Philippine Islands and Hong-Kong bear to the laws and practice of quarantine in the Commonwealth?

* *The Philippine Journal of Science*, January, 1908, p. 39.

Diseases like scarlet fever, measles, and diphtheria, need give rise to no anxiety when it is considered how rare these are in the Philippines, and how they appear to wear themselves out in the Northern Territory when they have been imported there from other parts of the Commonwealth.

Malaria exists already in the northern parts of Australia, and it seems scarcely reasonable or advisable to impose restrictions on vessels unless, of course, there should be a number of cases on board of a malignant type, as has occurred in this State. The precautions that dwellers in malarious countries take in everyday life against malarial infection are sufficient protection against imported disease of this nature.

Plague demands some notice. If this disease is to show itself it will almost always do so within a period of about four days after exposure of the individual. The five days' limit of the Paris Convention appears sufficient; and when one considers that a five and a half days' passage from Manila to Port Darwin is a rapid run, it will be clear that little danger need be apprehended. Further, the study of the behaviour of plague in white people of good sanitary habits has robbed the disease of very much of its terror; and cases of plague in most parts of Australia, if properly attended to, need give rise to no more risk than an equal number of cases of typhoid fever.

Small-pox will continue to be the disease that gives rise to most apprehension on the part of the Australian authorities. It is not endemic in any part of the Commonwealth. No outbreak of any extent has occurred among white people. We therefore do not know the natural history of the disease here. Nevertheless, the disease is a dreaded one; and every effort has been made hitherto to prevent the introduction of it, and large sums have been spent to eradicate it on occasions when it has gained entrance. The symptoms usually show in a person about *twelve* days after exposure. This means that a person may go on board a vessel at Hong-Kong apparently in good health, may call at Manila and Port Darwin, and may exhibit symptoms of small-pox for the first time after the vessel has left Port Darwin, and before reaching Thursday Island. This has actually occurred. This being so, it becomes apparent that while cases of plague and cholera on vessels from the north will almost invariably be evident at Port Darwin, and will be intercepted there, small-pox may for the first time be evident on arrival at Thursday Island, and will demand the action of the authorities there.